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June 4, 1991

TO: Minerals File

FROM: Holland Shepherd, Senior Reclamation Specialist, and 4/29/91
Joelle Burns, Engineering Technician

RE: Field Inspection, Barney's Canyon Exploration Projects and Barney's
Canyon Mine, Kennecott Corp., E/035/002 and M/035/009, Salt Lake
County, Utah

Date of Inspection: June 4, 1991
Time of Inspection: 9:00 a.m. to 12:30 p.m.
Conditions: Sunny, warm, muddy
Attendees: Bill Gunter, Bob Ramsey, Bill Dodge,
Kennecott; Holland Shepherd, Joelle Burns, DOGM

General

The inspection began with a meeting involving all individuals listed above. The Barney's Canyon management is thinking of expanding the mining operation to include some of the areas that are now under exploration. Mr. Ramsey, Barney's Canyon General Manager, was interested in finding out what permitting requirements would have to be met by Kennecott in the event of an expansion. I explained the Division's process of asking for an amendment or revision to the existing Mining and Reclamation Plan or Notice. A revision being a significant change, thus requiring the full approval process. An amendment would require approval, but not the public comment period. The Plan amendment/revision would include areas now designated as: 1) the Water Tunnel Prospect, 2) the North BCS Prospect and 3) the South BCS Prospect.

The Barney's Canyon site has been impacted by heavy rains over the last two months. Heavy rains have affected the site within the last 72 hours. Effects (erosion) of the rain were evident around the site, especially on areas that have been disturbed.

According to Mr. Gunter, the operator will be reclaiming an area, used for clay borrow, this summer. The clay was used as part of the composite liner on the latest leach pad constructed on-site.

An attempt was made to access the Harker's Canyon and Silica Knob Project areas, but it was too muddy. Another attempt will be made later this summer.

Inspections were made of the Water Tunnel, BCS South and BCS North projects, Barton Syndicate and Picnic Flats project areas. These areas have been impacted by many crisscrossing steep slope road cuts (especially the BCS North, BCS South and the Water Tunnel prospects). The cuts have been made on hillsides sloping from 30 to 40 degrees. Topsoil has been pushed over the side of the road cuts. According to Mr. Gunter the topsoil will be pulled back up with a backhoe if the areas are reclaimed and not mined. In most situations this practice is satisfactory; however, because of the steepness of the terrain and the number of road cuts, much of the topsoil material is being lost to erosion and sloughing of overburden materials over the topsoil. This situation has been aggravated substantially by the intense rain storms, which have affected this area recently.

Mr. Gunter indicated that drill holes located at the bottom of the Barney's Canyon drainage, associated with the Water Tunnel Project, have already been plugged with concrete, to prevent drainage from contaminating the aquifers. This practice is commendable and foresighted on the part of the operator.

Areas associated with the Barton Syndicate and Picnic Flats have not been as heavily impacted, by exploration activities. However, the Picnic Flats area has had a major slide impact from the heavy rains, associated with mining the Melco Pit which is located above the flats. The operator has used pre-existing roads to access sites. In some places the roads have been upgraded. Recent rainfall has caused substantial sloughing/gullyng associated with the roads.

Summary

I indicated to Mr. Gunter that I had some serious concerns with the loss of topsoil material associated with the heavily explored sites. Because of the increased exposure of these areas (removal of vegetation) and the steepness of the terrain, soil loss is occurring via rain, wind and gravitational sloughing. I indicated to Mr. Gunter that the Division would ask Kennecott for a plan to mitigate this loss. I suggested pre-stripping (most acceptable method), post-stripping of topsoil and degraded sandstone

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(parent material) mixed (acceptable as a last resort), and the construction of impounding structures built into stream channels to catch soil washed off slopes during rainstorms.

I emphasized that the topsoil is a valuable resource that would be essential for eventual successful reclamation.

I suggested to Mr. Gunter that we meet again to discuss development of a reclamation plan and surety for the exploration projects associated with the Barney's Canyon mine. I asked that an overview map be compiled, listing the associated disturbance (i.e. acreage for each project area). I also asked that the operator develop a new surety estimate. Acreage associated with heavily impacted areas will have to include all of the affected area, not just roads. Areas impacted by downcast and sloughing will be counted also.

jb

cc: Bob Ramsey, General Manager
Bill Gunter, Chief Geologist
Lowell Braxton, DOGM
Wayne Hedberg, DOGM

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